NORTH CAROLINA DIVISION OF AIR QUALITY

Application Review

Issue Date:

Region: Wilmington Regional Office
County: New Hanover
NC Facility ID: 6500083
Inspector's Name: Ashby Armistead
Date of Last Inspection: 05/09/2017
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): INVISTA, S.ar.l.

Facility Address:
INVISTA, S.ar.l.
4600 Highway 421 North
Wilmington, NC 28401

SIC: 2824 / Organic Fibers, Noncellulosic
NAICS: 325222 / Noncellulosic Organic Fiber Manufacturing

Facility Classification: Before: Title V **After:** Title V (due to MACT)
Fee Classification: Before: Title V **After:** Title V (due to MACT)

Permit Applicability (this application only)

SIP: 02D .0503
NSPS:
NESHAP: 40 CFR 63 Subparts H and FFFF
PSD:
PSD Avoidance: Removed PM and VOC limits
NC Toxics:
112(r):
Other: NAAQS modeling for SO_2

Contact Data

Facility Contact	Authorized Contact	Technical Contact
Elizabeth Meyer EHS Leader (910) 341-5515 4600 Highway 421 North Wilmington, NC 28443	William Keinath Site Manager (910) 341-5594 4600 Highway 421 N Wilmington, NC 28401	Elizabeth Meyer EHS Leader (910) 341-5515 4600 Highway 421 North Wilmington, NC 28443

Application Data

Application Number: 6500083.17A and 17B
Dates Received: 06/30/2017, 08/09/2017
Application Type: Modification/Renewal
Application Schedule: TV-Significant/Renewal

Existing Permit Data
Existing Permit Number: 00164/T52
Existing Permit Issue Date: 03/18/2015
Existing Permit Expiration Date: 10/31/2018

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2015	0.0800	15.58	4.66	16.50	1.79	0.9192	0.5883 [Dioxane, 1,4-]
2014	0.1500	29.08	13.04	26.11	2.15	6.57	4.88 [Methanol (methyl alcohol)]
2013	0.6700	138.73	96.00	1803.49	61.57	71.92	38.39 [Methanol (methyl alcohol)]
2012	0.7200	169.16	159.42	4439.26	66.12	130.83	77.09 [Methanol (methyl alcohol)]
2011	175.12	260.44	207.16	5958.89	82.93	153.44	88.77 [Methanol (methyl alcohol)]

Review Engineer: Jenny Kelvington

Review Engineer's Signature: **Date:**

Comments / Recommendations:
Issue: 00164/T53
Permit Issue Date:
Permit Expiration Date:

1. Purpose of Application

Application 6500083.17A requests a one-step significant modification of INVISTA's Title V permit for various changes to the permitted facility, including removing several sources in the permit due to the permanent shutdown of equipment; the removal of the normal operating scenario (NOS) for wastewater handling; and a classification change reflecting the facility's status as a true area source of hazardous air pollutants (HAP). Application 6500083.17B seeks renewal of INVISTA's Title V permit, which is set to expire on October 31, 2018. The renewal will extend the permit's expiration date through August 31, 2022.

2. Facility Description

INVISTA S.ar.l. (INVISTA) owns and operates a chemical manufacturing facility in Wilmington, NC. The facility manufactures aromatic polyester polyols which can be used in the manufacturing of rigid board or for spray insulation foam. Products made at this site include Terate® HT 5100 polyol and Terate® HT 5500 polyol.

3. History/Background/Application Chronology

Permit No.	Issuance Date	Description of Revision
00165T52	March 18, 2015	Significant modification to reflect the permanent shutdown of the dimethyl terephthalate (DMT) process and the current S02 NAAQS, allow the current wastewater treatment plant to treat process wastewater determined to be a Group 1 wastewater under the Miscellaneous Organic NESHAP (MON) at 40 C.F.R 63, Subpart FFFF, and to remove 2D .1100 emission limitations for the MACT affected sources.
00165T51	January 22, 2014	Significant modification to add submerged fill methanol loading and wastewater loading and to route emissions from several tanks directly to the flare via the methanol recovery header.
00164T50	November 17, 2013	Permit renewal and 2nd step of the Polyester Polyols standalone process.
00164T49	June 17, 2013	1st Step of a significant modification to operate the Polyester Polyols Production operation as a standalone process, separate from the DMT operations and to manufacture polyester polyols from Raw Material B.
00164T48	October 9, 2012	Permit Revision Adjudicated to Reinstate 15A NCAC 2D .1100 toxic air pollutant limits.
00164T47	July 18, 2012	Significant modification to reduce potential ambient impacts of sulfur dioxide (SO_2) in response to a letter from the NC DAQ indicating that air dispersion modeling had shown that the facility was potentially contributing to an exceedance of the new 1-hour National Ambient Air Quality Standard (NAAQS) for SO_2.
00164T46	November 2011	Minor modification to authorize an alternative operating scenario to allow reduced DMT production. It also incorporates "Last MACT" state-toxics limits.
00164T45	August 2011	Minor modification to add requirements from the Site Remediation MACT, OLD MACT, RICE MACT and NSPS IIII.
00164T44	May 2011	Significant modification to revise the PM emission limitation for the existing Polyester polyols ® Resins heaters (ID Nos. B7600 and B7602) under 15A NCAC 2D .0503.
00164T43	February 2011	Case-by-case MACT for boilers and process heaters pursuant to 15A NCAC 2D. 1109 (CAA § 112(j)).
00164T42	March 2009	Minor modification accommodate a long-term shutdown of Line D, including allowing biogas firing in heater no. 4 (ID No. HTR4).
00164T41	March 2009	Minor modification to install a new oxidizer on each of two existing DMT lines: Line C and Line D.

00164T40	January 2009	State-only modification to meet state-enforceable "Last MACT" toxics requirements pursuant to 15A NCAC 2Q .0705.
00164T39	December 2008	Minor modification authorizing the construction and operation of a new enclosed wastewater tank (ID No. T1939AR).
00164T38	August 2007	Title V Permit Renewal. [PUBLIC NOTICE & EPA REVIEW]
00164T37	May 2004	Second-part significant modification pursuant to 15A NCAC 2Q .0501(c)(2) to retube Boiler No. 1 (ID No. BLR1) and a natural gas burner. [PUBLIC NOTICE & EPA REVIEW]
00164T36	April 2004	Ownership change from KOSA to INVISTA, S.ar.l., effective April 30, 2004, and add capability to burn biogas from the anaerobic reactors in the No. 5 process heater.
00164T35	September 2003	Modification to revise of the source description of the purge evaporator tank (ID No. T4222) and add existing sources (ID Nos. R2203, A2414, A2204, and A220319) that were left out of the Initial Title V submittal.
00164T34	July 2003	First-part significant modification pursuant to 15A NCAC 2Q .0501(c)(2) to retube Boiler No. 1 (ID No. BLR1) and a natural gas burner.
00164T33	May 2003	Administrative amendment for clarifications to language in the previous permit.
00164T32	March 2003	Initial Title V Permit

4. Statement of Compliance

Mr. Ashby Armistead, Wilmington Regional Office (WiRO) inspected INVISTA on May 9, 2017 and found the that the facility was in compliance with state and federal air quality requirements during the time of inspection. In addition, the responsible official, Mr. William Keinath, Site Manager, has signed Form E5 certifying the facility is in compliance with all applicable requirements.

Compliance History

During the past five years, INVISTA has had one permit violation. On March 10, 2015 plant personnel discovered an insulated valve (T-7001V1) in heavy liquid service was leaking. However, it appears they did not realize that components in heavy liquid service are part of the LDAR program. A replacement value, which had to be specially ordered and manufactured, was installed on April 20, 2015. During the time between the leak detection and repair, the valve was not removed from service but was not in use between March 15, 2015 and March 30, 2015. Failing to make a first repair attempt within 5 calendar days of discovery and failing to fix the leak within 15 calendar days is a violation of 40 CFR 63.169.c. A NOV was issued on July 9, 2015.

5. Permit Modifications

MACT FFFF Operating Scenario

INVISTA has requested that the normal operating scenario (NOS), where MON Group 1 wastewater is sent to the biological wastewater treatment plant for destruction, and all associated conditions in its permit be removed. It currently follows the alternative operating scenario (AOS) for the handling of wastewater generated in the polyester polyol reactors and has no intentions of managing wastewater per the NOS.

The reference to "AOS" and the MACT FFFF Gww2 scenario have been removed from Section 1.0 of the permit – specifically from emissions sources (ID Nos. A-7230, T-7230-7, T-6109, Wastewater Truck Loading, T1922C, T1922D, T1922E, T1939AR and T-1941 and from Permit Condition 2.1. I.6. Additionally, Permit Condition 2.1. I.7, which specifies the requirements for the NOS, and the MACT FFFF Gww2 scenario reference have has been deleted.

Revisions to Permit Conditions

INVISTA has asked that the site be allowed to use rolling three-hour block averages to demonstrate the heat value of the gas entering the flare is at least the minimum required and use an approved emission limit as an alternative to the some of the value leak detection requirements per 40 CFR §63.162(b). As discussed in Section 7, these requests are appropriate and have been incorporated into the permit.

Sulfur Dioxide NAAQS Modeling Demonstration

INVISTA has updated its modeling demonstration for the sulfur dioxide (SO_2) National Ambient Air Quality Standard (NAAQS) to reflect recent and future land sales that change the property boundary. It used AERMOD (16216r) and 2012 to 2016 meteorological data from Wilmington (surface) and Newport (upper air) to evaluate the impacts of its SO_2 emissions on both simple and elevated terrain. The maximum modeled 5-year average SO_2 high-4th-high 1-hour was 50.37 micrograms per cubic meter – which is only 25.7 percent of the NAAQS. Mr. Alex Zarnowski, Meteorologist, NC DAQ Air Quality Analysis Branch, reviewed the modeling and found it adequately demonstrates compliance.

Emission Source Changes

Seven permitted sources, including hot oil medium polyester polypols heater (ID No. B7602); No. 2 fuel oil/natural gas/propane-fired boiler (ID No. BLR4); three No. 2 fuel oil-fired fire pumps (ID Nos. FP-1500-B to FP-1500-C); two wastewater equalization open top tanks (ID Nos. T1922A and T1922B) have been removed from the site. The permit has been updated to reflect their removal.

Insignificant Activities Changes

Seventeen insignificant activities have been removed from the site and deleted from the List of Insignificant Activities. In addition, INVISTA has requested the removal of cooling tower (ICT56) and the addition of the following insignificant activities:

Unit ID	Description	Basis for Exemption or Insignificant Activity
IMAINT	Various Maintenance Activities	15A NCAC 02Q .0503
IPAINT	Various Painting Activities	15A NCAC 02Q .0503
IR04	Electric Tote/Drum Heater	15A NCAC 02Q .0503
IR05	Isotainer Loading (20,000-gallon capacity)	15A NCAC 02Q .0503
IT01	Gasoline storage tank (145-gallon capacity)	15A NCAC 02Q .0503
IT02	Fuel Oil Storage Tank (506-gallon capacity)	15A NCAC 02Q .0503
IT03	Fuel Oil Storage Tank (262-gallon capacity)	15A NCAC 02Q .0503
IT04	Fuel Oil Storage Tank (262-gallon capacity)	15A NCAC 02Q .0503
IT12	Floating roof tank storing very low volatility material (1,000,000-gallon capacity)	15A NCAC 02Q .0503 (8)
IT130051R	Generator Fuel Oil Storage (410-gallon capacity)	15A NCAC 02Q .0503
IT15012	Generator Fuel Oil Storage (79-gallon capacity)	15A NCAC 02Q .0503
IT8205	Used Oil Storage tank (536-gallon capacity)	15A NCAC 02Q .0503
IT8209	Fuel Oil Storage (550-gallon capacity)	15A NCAC 02Q .0503

The changes requested are classified as a significant modification since they involve a significant change in existing monitoring permit conditions.

The following table describes the changes to the current permit as requested by the application.

Pages	Section	Description of Changes
N/A	Cover page and throughout	• Updated all dates and permit revision numbers, header and footer. • Changed the responsible official to Mr. William Keinath
N/A	List of Insignificant Activities	• Added thirteen activities to the list: IMAINT, IPAINT, IR04, IR05, IT01 to IT04, IT12, IT130051R. IT15012, IT8205 and IT8209 • Removed eighteen activities from the list: ICTS5, ICTS6, IR1972, IR1982, IT1500A, IT1500B, IT1500C, IT1500D, IT1977, IT1979, IT402010R, IT4021, IT6522, IT69004, IT6903, IT76017, IT76022, and IT7604 • Renumbered insignificant activities.
1 to 3	1.0	• Removed reference to "AOS" for sources: A-7230, T-7230-7, T-6109, Wastewater Truck Loading, T1922C, T1922D, T1922E and T-1941 • Removed MACT FFFF Gww2 scenario for T1939AR • Removed the R from T-6109R such that ID No. is T-6109 • Added MACT maintenance wastewater applicability for T1922E • Removed the following emissions sources: T1922A, T1922B, B7602, BLR4, FP-1500-B, FP-1500-C, and FP-1500-D
5	2.1.C.1	• Revised the 02D .0503 particulate emission limit based on the heat rate of the remaining fuel burning indirect heat exchangers.
17	2.1.I.3	Added this clarifying language "When the Permittee is complying with the heat content specifications in Conditions 2.1.I.3.d.iii.A., the heat content shall be determined by the rolling average of three one-hour block averages."
22	2.2.A.5	Added clarifying language to the permit to define the time allowed for maintenance and repair before considering an open-ended line to be non-compliant.
35	2.2.C.2	Removed the 100 ton per year 02Q .0317 avoidance limits for particulates and volatile organic compound emissions and the associated recordkeeping and reporting required to demonstrate compliance.
N/A	N/A	Removed the 10 tons per year individual HAP and 25 tons per year total HAP 02D .0317 avoidance limits and the associated recordkeeping and reporting requirements
36 - 44	3.0	Updated the General Conditions to Version 5.1.

6. Regulatory Review

INVISTA's current permitted equipment is subject to the following regulations:

15A NCAC 02D .0503, Particulates from Fuel Burning Indirect Heat Exchangers
15A NCAC 02D .0516, Sulfur Dioxide Emissions from Combustion Sources
15A NCAC 02D .0521, Control of Visible Emissions
15A NCAC 02D .0524, New Source Performance Standards, 40 CFR 60 Dc
15A NCAC 02D .1100, Control of Toxic Air Pollutants
15A NCAC 02D .1111, National Emissions Standards for Hazardous Air Pollutants (HAPs) – 40 CFR 63 F, G, H, FF, EEEE, FFFF, IIII, ZZZZ and GGGGG
15A NCAC 02D .1806, Control and Prohibition of Odorous Emissions
15A NCAC 2Q .0317, Avoidance conditions for 15A NCAC 02D .0530, 15A NCAC 02D .0544, 15A
15A NCAC 02D .1111. 40 CFR Part 63, Subpart JJJJJJ,
15A NCAC 02Q .0711, Emission Rates Requiring a Permit

15A NCAC 02D .0503. Particulates from Fuel Burning Indirect Heat Exchangers - At the time of the T44 revision, INVISTA's Terate facility had only one fuel burning indirect heat exchanger and was considered a separate plant from INVISTA main facility at that time. Now that it has only one plant, all the fuel burning indirect heat exchangers are subject to the same particulate emissions limit which is 0.22 pounds per million Btu heat input based on the following equation:

$$E = 1.090 \text{ times } Q \text{ to the } -0.2594 \text{ power} = (1.090)(468)^{-0.2594} = 0.2212$$

Where: E = emission limit in pounds per million Btu heat input
Q = maximum heat input in million Btu/hour of all fuel burning indirect heat exchangers

The permit has been revised to show BLR1, BLR5 and B7600 are all limited to 0.22 pounds of particulate emissions per million Btu heat input. Because of the low particulate emitting fuels (natural gas, propane and low sulfur No. 2 fuel oil) they burn, these sources emit particulates at a rate that is much less than the limit. Compliance is indicated.

15A NCAC 02Q .0317, Avoidance condition for 15A NCAC 02D .0530 – With the proposed modifications, the facility's unlimited potential emissions of particulates and volatile organic compounds (VOCs) are less than 100 tons per year (tpy) –at no more than 52.7 tons per year of particulate emissions and no more than 77.5 tons per year of VOCs. Therefore, the avoidance condition has been revised to remove the 100 tpy limits for these two pollutants along with the associated recordkeeping and reporting. INVISTA will continue to be required to track, record and report emissions of carbon monoxide (CO), nitrogen oxide (NOx) and sulfur dioxide (SO2) from its combustion sources to remain a minor source with respect to PSD.

15A NCAC 02Q .0317, Avoidance condition for 15A NCAC 02D .1111 - The proposed modifications reduce potential total HAP emissions from facility-wide sources to less to 8 tons per year and change the facility to a true area source of HAPs. Thus, the avoidance condition for 15A NCAC 02D .1111 is no longer necessary and has been removed from the permit.

15A NCAC 2D .0949 - Not Applicable
The only storage tank over 50,000 gallons that is requested to be added is the 1,000,000-gallon floating roof storage tank, ID No. IT12, that has a liquid vapor pressure of less than 0.02 psi and thus not regulated under this rule.

7. NSPS, NESHAP/MACT, NSR/PSD, 112(r), CAM

NSPS
40 CFR Part 60 does not apply to any of the equipment affected by the proposed changes. The products, by-products or co-products manufactured in the polyester polyols facility are not Synthetic Organic Chemical Manufacturing Industry (SOCMI) listed chemicals nor Polymer Manufacturing Industry listed chemicals and thus are not subject to New Source Performance Standards (NSPS)in 40 CFR Part 60, Subparts NNN, RRR, DDD, and VVa.

Additionally, the proposed tank (IT12) - an insignificant activity - will not store liquid volatile organic compounds with a maximum true vapor pressure of more than 3.5 kPa (0.5 psi) and thus is not subject to the NSPS requirements in 40 CFR 60, Subpart Kb.

NESHAP/MACT

INVISTA was a major source of hazardous air pollutants (HAPs) (more than 10 tons per year of potential individual HAP emissions and more than 25 tons per year of potential combined HAPs emissions) when the initial substantive compliance date for several National Emission Standards for HAPs (NESHAP) regulations occurred. HAP emissions have since dropped below major source thresholds due to cessation of several operations and INVISTA is now a true area source of HAP. Thus, the major HAP source avoidance limits in Condition 2.2.C.2 are no longer needed and have been removed from the permit. However, because of a controversial policy memorandum issued by the U.S. Environmental Protection Agency (EPA) in 1995 that is commonly referred to the "once-in-always-in" policy, INVISTA has chosen to keep the maximum achievable control technology (MACT) requirements that it triggered as a major HAP source including the Miscellaneous Organic NESHAP, or "MON" in 40 CFR 63 Subpart FFFF, in its permit. The MON is only MACT standard that is affected by the proposed permit modifications.

Miscellaneous Organic NESHAP (MON), 40 CFR 63, Subpart FFFF

The polyester polyols production facility generates an aqueous by-product stream containing HAP and thus is subject to the MON. The stream is processed in a series of two distillation columns (ID Nos. A-7230 and A-6105) to separate and recycle the non-HAP organic material for use as a reactant. As part of the designated "Alternate Operating Scenario," the two distillation columns remove HAP from the wastewater stream sent to the wastewater treatment plant (WWTP) such that the stream is considered a Group 2 wastewater stream as defined in §63.2550.

Because INVISTA does not currently produce or intend to generate Group 1 Wastewater as defined by the MACT, it does not need to follow the "Normal Operating Scenario" in the permit, which allows Group 1 Wastewater to be sent to the onsite wastewater treatment facility. Removing the "normal operating scenario" from the permit will substantially reduce the potential emissions of HAP (1,4 dioxane) from the facility.

INVISTA operates a non-assisted flare (G-1955) in accordance with the MON to destroy HAP from its miscellaneous organic chemical manufacturing process unit (MCPU). Table 2 to Subpart FFFF of Part 63 allows a process with Group 1 batch process vents to comply by reducing uncontrolled organic HAP emissions from one or more batch process vents within the process by venting through a closed-vent system to a flare. Per 40 CFR 63.2460, the flare must meet the performance requirements in 40 CFR 63.11(b) (General Provisions). 40 CFR 63.11(b)(6)(ii) specifies, "Flares shall be used only ….with the net heating value of the gas being combusted at 7.45 M/scm (200 Btu/scf) or greater.

The facility uses a natural gas assist system to maintain the gas entering the flare at or above 200 BTU/scf and monitors the one-hour block averages of the heat content to demonstrate compliance. Occasionally, issues arise with the assist gas equipment which may result in the assist gas not supplying an adequate amount of natural gas to raise the heat content to the minimum required.

INVISTA proposes to use three-hour heat content averages to demonstrate compliance and requests an additional clarifying statement in 2.1.I.3.d.iv:

> *When the Permittee is complying with the heat content specifications in 2.1.I.3.d.iii.A., the heat content shall be determined by the rolling average of three one-hour block averages.*

Neither the MON requirements for the flare, specifically 40 CFR 63.11(b), nor the U.S. EPA inspection

guidance specify an averaging time for demonstrating the net heating value of the gas being combusted is 200 Btu/scf or greater.[1] The EPA inspection tool indicates compliance for the flare when all hourly records of whether the monitor is continuously operating and whether the flare flame or at least one pilot flame is continuously present are kept for at least five years. An example given in the definition of "averaging time" in 40 CFR 63.2 suggests that a daily average of the net heating value of the gas could be a sufficient compliance indicator.[2]

There is a precedent for 3-hr block averages in demonstrating destruction efficiency for oxidizers in the NESHAP for Plywood and Composite Wood Products. 40 CFR 63 Subpart DDDD requires owners and operators to maintain the 3-hour block average firebox temperature at or above the minimum temperature established during the performance test or the 3-hour block average total hydrocarbon concentration in the thermal oxidizer exhaust at or below the maximum concentration established during the performance test. NC DAQ finds the change proposed by INVISTA to be appropriate and has revised the permit accordingly.

Organic Hazardous Air Pollutants for Equipment Leaks NESHAP, 40 CFR 63 Subpart H

INVISTA requests that the following clarifying language be added to permit condition 2.2.A.5 to define the time allowed for maintenance and repair before considering an open-ended line to be non-compliant.

> *If the isolation of equipment for hot work or the removal of a component for repair or replacement results in an open ended line or valve, it is exempt from the requirement to install a cap, blind flange, plug, or second valve for **72 hours**. If the repair or replacement is not completed within **72 hours**, the permit holder must complete either of the following actions within that time period;*
>
> 1. *A cap, blind flange, plug, or second valve must be installed on the line or valve; or*
> 2. *The open-ended valve or line shall be monitored once for leaks above background for a plant or unit turnaround lasting up to **45 days** with an approved gas analyzer and the results recorded. For all other situations, the open-ended valve or line shall be monitored once by the end of the **72-hour** period following the creation of the open ended line and monthly thereafter with an approved gas analyzer and the results recorded. For turnarounds and all other situations, leaks are indicated by readings of 500 ppmv and must be repaired within **24 hours** or a cap, blind flange, plug, or second valve must be installed on the line or valve.*

Leak detection and repair requirements are specified in 40 CFR 63 Subpart H for the MON (40 CFR 63 Subpart FFFF). 40 CFR 63.167 requires open ended lines to be capped or plugged at all times "*except during operations requiring process fluid flow through the open-ended valve or line, during maintenance or repair or when compliance with an approved emission limit is used as an alternative to the requirements per 40 CFR 63.162(b).*"

The proposed language is consistent with the Texas Commission on Environmental Quality Air Permits Division New Source Review (NSR) boilerplate special conditions for piping, valves, connectors, pumps, and compressors as best attainable control technology (BACT) which states:

---

[1] Table 10-1 "Compliance Checklist for Flares" of the EPA inspection tool for the MON indicates compliance when hourly records are kept for at least five years of whether the monitor is continuously operating and whether the flare flame or at least one pilot flame is continuously present. See EPA-305-B-06-002, September 2006, Inspection Tool for the Miscellaneous Organic Chemical Manufacturing NESHAP at https://www.epa.gov/sites/production/files/2014-06/documents/caa-inspections-mon.pdf

[2] 40 CFR 63.2 defines averaging time as the period over which you average and use data to verify proper operation of the pollution control approach or compliance with the emissions limitation or standard and provides as examples of averaging time a 3-hour average in units of the emissions limitation, a 30-day rolling average emissions value, a daily average of a control device operational parametric range, and an instantaneous alarm.

"Each open-ended valve or line shall be equipped with an appropriately sized cap, blind flange, plug, or a second valve to seal the line. Except during sampling, both valves shall be closed. If the isolation of equipment for hot work or the removal of a component for repair or replacement results in an open ended line or valve, it is exempt from the requirement to install a cap, blind flange, plug, or second valve for 72 hours. If the repair or replacement is not completed within 72 hours, the permit holder must complete either of the following actions within that time period;

1. *a cap, blind flange, plug, or second valve must be installed on the line or valve; or*
2. *the open-ended valve or line shall be monitored once for leaks above background for a plant or unit turnaround lasting up to 45 days with an approved gas analyzer and the results recorded. For all other situations, the open-ended valve or line shall be monitored once by the end of the 72 hours period following the creation of the open ended line and monthly thereafter with an approved gas analyzer and the results recorded. For turnarounds and all other situations, leaks are indicated by readings of 500 ppmv and must be repaired within 24 hours or a cap, blind flange, plug, or second valve must be installed on the line or valve*."

NC DAQ finds the change proposed by INVISTA to be appropriate and has revised the permit accordingly.

New Source Review (NSR)/Prevention of Significant Deterioration (PSD)

Chemical processing plants, such as INVISTA, are one of the 28 listed source categories that are considered major sources under PSD if they have the potential to emit 100 tons per 12-month period or more of any criteria pollutant. INVISTA's permit limits the emissions of carbon monoxide (CO), nitrogen oxides (NOx), particulate matter (PM), and sulfur dioxide (SO2) – each to 100 tons per year – for the facility to be classified as a PSD minor source. Although several sources emitting these pollutants have been removed from the permit, the PSD avoidance condition is still necessary.

112(r)

Per Form A3 entitled "112(r) Applicability Information", the facility is not subject to 40 CFR Part 68 "Prevention of Accidental Releases" – Section 112(r) of the Federal Clean Air Act. The facility is not subject to this rule because it does not store one or more of the regulated substances in quantities above the thresholds in the Rule. This permit modification and renewal does not affect the status with respect to 112(r).

CAM

The CAM rule (40 CFR 64) does not apply to the INVISTA facility as it does not have any pollutant specific emissions unit (PSEU) - for which it does not have continuous emissions monitoring - that meet all the following criteria:

1. Is subject to an emission limitation or standard.
2. Uses a control device to achieve compliance.
3. Has potential pre-control emissions that exceed or are equivalent to the major source threshold.

8. Facility Wide Air Toxics

The INVISTA facility is an affected source for MACT standards under 15A NCAC 02D .1111, 40 CFR Part 63 Subparts G, H, EEEE, FFFF, ZZZZ and potentially GGGGG. Consequently, pursuant to 15A NCAC 02Q .0702(a)(27)(B), the INVISTA facility is not required to have a permit to emit toxic air pollutants unless the Division determines that modeled emissions result in one or more acceptable

ambient levels in 15A NCAC 02D .1104 being exceeded. These permit applications only request removal of air toxic emission sources, so no additional air toxic impacts need to be evaluated.

9. Facility Emissions Review

The potential facility-wide emissions following the modification were provided by the applicant in Appendix B of the application.

ACRITERIA AIR POLLUTANT EMISSIONS INFORMATION - FACILITY-WIDE (Tons per Year)			
AIR POLLUTANT EMITTED	POTENTIAL EMISSIONS		2016 ACTUAL EMISSIONS
	(Before Limitations)	(After Limitations)	
PARTICULATE MATTER (PM)	52.7	52.7	4.36
PARTICULATE MATTER < 10 MICRONS (PM_{10})	36.5	36.5	3.00
PARTICULATE MATTER < 2.5 MICRONS ($PM_{2.5}$)	24.7	24.7	2.37
SULFUR DIOXIDE (SO_2)	211	100	0.127
NITROGEN OXIDES (NOx)	309	100	20.5
CARBON MONOXIDE (CO)	196	100	26.3
VOLATILE ORGANIC COMPOUNDS (VOC)	77.5	77.5	3.39
LEAD	0.0185	0.0185	0.0001
CO_2 Equivalent (CO_2e)	346,000	100,000	25,300
SULFURIC ACID (H_2SO_4)	2.97	2.97	0.005
LARGEST INDIVIDUAL HAP	3.75 (hexane)	3.75 (hexane)	1.1 (1,4-dioxane)
TOTAL HAPS	7.94	7.94	2.35

10. Public Notice/EPA and Affected State(s) Review

On August X, 2017, a final draft version of Permit No. 00164T53 and the associated review document were sent to Mr. William Keinath, Site Manager, INVISTA; Mr. Dean Carroll, WiRO; and Ms. Heather Ceron, Air Permits Section Chief, U.S. Environmental Protection Agency (EPA) for their review and comments. The EPA review expired on September, 2017.

The 30-day public notice period began on August X, 2017 and ended September X, 2017.

11. Other Regulatory Considerations

The application includes the zoning consistency determination signed by Linda E. Painter, Zoning Compliance Official for New Hanover County on June 23, 2017 stating that the proposed operation is consistent with applicable zoning and subdivision ordinances as required by 02Q .0304(b)(1).

12. Comments and Recommendations

The applications for the permit modification and renewal for INVISTA in Wilmington, New Hanover County, North Carolina have been reviewed by DAQ to determine compliance with all procedures and requirements. DAQ has determined that this facility is complying or will achieve compliance, as specified in the permit, with all requirements that are applicable to the affected sources. The DAQ recommends the issuance of Air Permit No. 00164T53 with the expiration date extended until August 31, 2022.